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SeaWiFS Technical Report Series

Stanford B. Hooker and Elaine R. Firestone, Editors

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Stanford B. Hooker and Elaine R. Firestone

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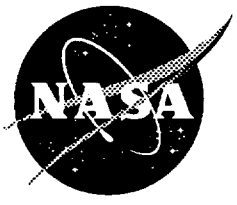

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FROM:	**SeaWiFS Technical Editor/Records and Information Manager**
TO:	**Oceanographic and Marine Science Colleagues**
SUBJECT:	**Errata Sheet for SeaWiFS Technical Report Series**
DATE:	**7/12/93**

Vol. 6:
The authorship of this volume was **incorrectly** printed as: Stanford B. Hooker and Elaine R. Firestone. It **should** read:

Elaine R. Firestone and Stanford B. Hooker.

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1992

ABSTRACT

The Sea-viewing Wide Field-of-view Sensor (SeaWiFS) is the follow-on ocean color instrument to the Coastal Zone Color Scanner (CZCS), which ceased operations in 1986, after an eight year mission. SeaWiFS is expected to be launched in August 1993, on the SeaStar satellite, being built by Orbital Sciences Corporation (OSC). The SeaWiFS Project at the NASA/Goddard Space Flight Center (GSFC) has undertaken the responsibility of documenting all aspects of this mission, which is critical to the ocean color and marine science communities. This documentation, entitled the *SeaWiFS Technical Report Series,* is in the form of NASA Technical Memoranda Number 104566. All reports published are volumes within the series. This volume serves as a reference, or guidebook, to the previous five volumes and consists of four main sections including an index to key words and phrases, a list of all references cited, and lists of acronyms and symbols used. It is our intention to publish a summary index of this type after every five volumes in the series. This will cover the topics published in all previous editions of the indices, that is, each new index will include all of the information contained in the preceeding indices.

1. INTRODUCTION

This first in a series of indices, published as a separate volume in the SeaWiFS Technical Report Series, covers information found in the following volumes:

Vol. 1: S.B. Hooker, W.E. Esaias, G.C. Feldman, W.W. Gregg, and C.R. McClain, *An Overview of SeaWiFS and Ocean Color.*

Vol. 2: W.W. Gregg, *Analysis of Orbit Selection for SeaWiFS: Ascending vs. Descending Node.*

Vol. 3: C.R. McClain, W.E. Esaias, W. Barnes, B. Guenther, D. Endres, S.B. Hooker, B.G. Mitchell, and R. Barnes, *Calibration and Validation Plan for SeaWiFS.*

Vol. 4: C.R. McClain, E. Yeh, and G. Fu, *An Analysis of GAC Sampling Algorithms: A Case Study.*

Vol. 5: J.L. Mueller and R.W. Austin, *Ocean Optics Protocols for SeaWiFS Validation.*

This volume within the series serves as a reference, or guidebook, to the aforementioned volumes and consists of four main sections including a summary index to key words and phrases, a glossary of acronyms, a list of symbols used, and a bibliography of all references cited. Unless indicated otherwise, the index entries refer to some aspect of the SeaWiFS sensor or project, for example, the *mission overview* index entry refers to an overview of the SeaWiFS mission.

The nomenclature of the index is a familiar one, in the sense that it is a sequence of alphabetical entries, but it utilizes a unique format since multiple volumes are involved. An index entry is composed of a keyword followed by an entry field which directs the reader to the possible locations where a discussion of the keyword can be found. The entry field is normally made up of a volume identifier shown in bold face, followed by a pages identifier, which is always enclosed in parentheses:

keyword, **volume**(pages).

If an entry is the subject of an entire volume, the volume field is shown in slanted type with no page field:

keyword, *Vol. (number).*

Figures or tables that provide particularly important summary information are also indicated as separate entries in the pages field. In this case, the figure or table number is given with the page number it appears on.

SUMMARY INDEX

Glossary

ACRIM	Active Cavity Radiometer Irradiance Monitor
ACS	Attitude Control System
A/D	Analog-to-Digital
ADEOS	Advanced Earth Observation Satellite (Japanese)
ALSCAT	ALPHA and Scattering Meter (Note: the symbol α corresponds to $c(\lambda)$, the beam attenuation coefficient, in present usage).
AOCI	Airborne Ocean Color Imager
AOL	Airborne Oceanographic Lidar
AOS/LOS	Acquisition of Signal/Loss of Signal
ARGOS	Name given to the data collection and location system on the NOAA Operational Satellites (not an acronym)
AT	Along-Track
AVHRR	Advanced Very High Resolution Radiometer
AVIRIS	Advanced Visible and Infrared Imaging Spectrometer
BBR	Band-to-Band Registration
bpi	bits per inch
BRDF	Bidirectional Reflectance Distribution Function
BUV	Backscatter Ultraviolet Spectrometer
CalCOFI	California Cooperative Fisheries Institute
Cal/Val	Calibration and Validation
Case 1	Water whose reflectance is determined solely by absorption.
Case 2	Water whose reflectance is significantly influenced by scattering.
CDOM	Colored Dissolved Organic Material
CDR	Critial Design Review
CHORS	Center for Hydro-Optics and Remote Sensing (San Diego State University)
cpu	Central Processing Unit
CRM	Contrast Reduction Meter
CRT	Calibrated Radiance Tapes; or Cathode Ray Tube.
CT	Cross-Track
CTD	Conductivity, Temperature, and Depth
CVT	Calibration/Validation Team
CW	Continuous Wave
CZCS	Coastal Zone Color Scanner
DAAC	Distributed Active Archive Center
DC	Direct Current
DCF	Data Capture Facility
DCP	Data Collection Platform
DOC	Dissolved Organic Carbon
DOM	Dissolved Organic Matter
ECMWF	European Centre for Medium Range Weather Forecasts
ECT	Equator Crossing Time

EOS Earth Observing Satellite
EOSAT Earth Observation Satellite Company
EOSDIS Earth Observing Satellite Data Information System
ERBE Earth Radiation Budget Experiment
ERBS Earth Radiation Budget Sensor
ER-2 Earth Resources-2
ESA European Space Agency

FDDI Fiber Data Distribution Interface
FNOC Fleet Numerical Oceanography Center
FOV Field-of-View
FWHM Full-Width Half-Maximum

GAC Global Area Coverage, coarse resolution satellite data with a nominal ground resolution of approximately 4 km.
GASM General Angle Scattering Meter
GFF Glass Fiber Filter by Whatman
GLI Global Imager
GMT Greenwich Mean Time
GOES Geosynchronous Orbital Environmental Sat-ellite
GOFS Global Ocean Flux Study
GPS Global Positioning System
GSFC Goddard Space Flight Center

HeNe Helium-Neon
HPLC High Performance Liquid Chromatography
HRPT High Resolution Picture Transmission
HYDRA Hydrographic Data Reduction and Analysis

IAPSO International Association for the Physical Sciences of the Ocean
ICES International Council on Exploration of the Seas
IFOV Instantaneous Field-of-View
I/O Input/Output
IOP Inherent Optical Properties
IR Infrared
IUE International Ultraviolet Explorer

JGOFS Joint Global Ocean Flux Study

LAC Local Area Coverage, fine resolution satellite data with a nominal ground resolution of approximately 1 km.
Level-0 Raw data.
Level-1 Calibrated radiances.
Level-2 Derived products.
Level-3 Gridded and averaged derived products.

MAREX Marine Resources Experiment Program
MARS Multispectral Airborne Radiometer System
MERIS Medium Resolution Imaging Spectrometer
MIPS Millions of Instructions Per Second
MOBY Marine Optical Buoy
MODIS Moderate Resolution Image Spectrometer
MODIS-N Moderate Resolution Image Spectrometer—Nadir
MODIS-T Moderate Resolution Image Spectrometer—Tilt
MTF Modulation Transfer Function

NAS National Academy of Science
NASA National Aeronautics and Space Administration
NASCOM NASA Communications
NASDA National Space Development Agency (Japanese)
NASIC NASA Aircraft/Satellite Instrument Calibration
NCDS National Climate Data System
NEΔT Noise Equivalent Delta Temperature
NEδL Noise Equivalent delta Radiance
NESDIS National Environmental Satellite Data Information Service
NET Nimbus Experiment Team
NIST National Institute of Standards of Technology
NMC National Meteorological Center
NOAA National Oceanic and Atmospheric Administration
NOARL Naval Oceanographic and Atmospheric Research Laboratory
NRA NASA Research Announcement
NSCAT NASA Scatterometer
NSF National Science Foundation

OCTS Ocean Color Temperature Sensor (Japanese)
ODAS Ocean Data Acquisition System
OFFI Optical Free-Fall Instrument
ONR Office of Naval Research
OSC Orbital Sciences Corporation
OSFI Optical Surface Floating Instrument
OSSA Office of Space Science and Applications

PAR Photosynthetically Available Radiation
PDR Preliminary Design Review
PIKE Phased Illuminated Knife Edge
POC Particulate Organic Carbon
POLDER Polarization Detecting Environmental Radiometer (French)
PON Particulate Organic Nitrogen
PSU Practical Salinity Units

QC Quality Control

RDF Radio Direction Finder
RFP Request for Proposal
rms root mean squared
ROSIS Remote Sensing Imaging Spectrometer, also known as the Reflective Optics System Imaging Spectrometer (Germany)
RTOP Research and Technology Operation Plan

SARSAT Search and Rescue Satellite
SBRC Santa Barbara Research Center
SBUV Solar Backscatter Ultraviolet Radiometer
SBUV-2 Solar Backscatter Ultraviolet Radiometer–2
SCOR Scientific Committee on Oceanographic Research
SDPS SeaWiFS Data Processing System
SeaWiFS Sea-viewing Wide Field-of-view Sensor
SIS Spherical Integrating Source
SISSR Submerged *In Situ* Spectral Radiometer
SMM Solar Maximum Mission
SNR Signal-to-Noise Ratio
SOC Spacecraft Operations Center
SOGS SeaStar Operations Ground Subsystem
SPM Suspended Particulate Material
SPO SeaWiFS Project Office
SPOT *Satellite Pour l'Observation de la Terre* (French)
SPSWG SeaWiFS Prelaunch Science Working Group
SST Sea Surface Temperature
ST Science Team
SWG Science Working Group

T-S Temperature-Salinity
TBD To Be Determined
TDI Time-Delay and Integration
TDRSS Tracking and Data Relay Satellite System
TOMS Total Ozone Mapping Spectrometer
TOPEX Topography Experiment
TSM Total Suspended Material

UNESCO United Nations Educational, Scientific, and Cultural Organizations
UVB Ultraviolet-B

VHF Very High Frequency
VISLAB Visibility Laboratory (Scripps Institution of Oceanography)
VISNIR Visible and Near Infrared

WFF Wallops Flight Facility
WMO World Meteorological Organization
WOCE World Ocean Circulation Experiment
WORM Write Once Read Many

SYMBOLS

$a(z,\lambda)$ Spectral absorption coefficient
$b(z,\lambda)$ Total scattering coefficient
$b(\theta,z,\lambda_0)$ Volume scattering coefficient
$b_b(z,\lambda)$ Spectral backscattering coefficient
$b_r(\lambda)$ Total Raman scattering coefficient
$c(z,\lambda)$ Spectral beam attenuation coefficient
$c(z,660)$ Red beam attenuation (at 660 nm)
$E_a(\lambda)$ Irradiance in air
E_{cal} Calibration source irradiance
$E_d(0^-,\lambda)$ Incident spectral irradiance
$E_d(z,\lambda)$ Downwelled spectral irradiance
$E_s(\lambda)$ Surface irradiance
$E_{\text{sky}}(\lambda)$ Spectral sky irradiance distribution
$E_{\text{sun}}(\lambda)$ Spectral sun irradiance distribution
$E_u(z,\lambda)$ Upwelled spectral irradiance
$E_w(z,\lambda)$ Irradiance in water
$K(z,\lambda)$ Diffuse attenuation coefficient
$K_E(\lambda)$ Attenuation coefficient downwelled irradiance
$K_L(z,\lambda)$ Attenuation coefficient upwelled radiance
$L_u(z,\lambda)$ Upwelled spectral radiance
L_{cal} Calibration source radiance
$L(z,\theta,\phi)$ Submerged upwelled radiance distribution
$L_{\text{sky}}(\lambda)$ Spectral sky radiance distribution
$L_W(\lambda)$ Water-leaving radiance
$L_{WN}(\lambda)$ Normalized water-leaving radiance
$n_w(\lambda)$ Index of refraction of water
$Q(\lambda)$ $L_u(0^-,\lambda)$ to $E_u(0^-,\lambda)$ relation factor (theoretically equal to π)
$R_L(z,\lambda)$ Spectral reflectance
R_z Sunspot number
S Solar constant
$T_s(\lambda)$ Transmittance through the surface
$T_w(\lambda)$ Transmittance through a water path
$\beta(z,\lambda,\theta)$ Spectral volume scattering function
$\overline{\mu}_d(0^+,\lambda)$ Spectral mean cosine for downwelling radiance at the sea surface
$\tau(z,\lambda)$ Spectral optical depth
$\tau_s(\lambda)$ Spectral solar atmospheric transmission

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13. ABSTRACT *(Maximum 200 words)*

The Sea–viewing Wide Field–of–View Sensor (SeaWiFS) is the follow–on ocean–color instrument to the Coastal Zone Color Scanner (CZCS) which ceased operations in 1986, after an 8-year mission. SeaWiFS is expected to be launched in August 1992, on the SeaStar satellite, being built by Orbital Sciences Corporation (OSC). The SeaWiFS Project at the NASA/Goddard Space Flight Center (GSFC) has undertaken the responsibility of documenting all aspects of the mission, which is critical to the ocean–color and marine–science communities, in the form of NASA Technical Memoranda. This volume within the series serves as a reference, or guidebook, to the previous five volumes and consists of four main sections including an index to keywords and phrases, a list of all references cited, and lists of acronyms and symbols used. It is our intention to publish a summary index after every five volumes in the series, which will cover the topics published in all previous editions of the indices—that is, each new index will include all of the information contained in the preceding indices.

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